REMARKS

A restriction was previously required as between Group 1, claims 17-25 and 32, drawn to calculating the physical feature by curve fitting wherein the backscatter function is a function of an average path length traveled by detected, scattered photons; and Group 2, claims 26-31 and 33-36, drawn to calculating the physical feature by curve fitting in which the backscatter function is a function of a mean free path of photons.

In the Amendment filed on November 16, 2009, he applicant affirmed that he has elected Group 2 for further prosecution in this application.

Method claim 37, as amended in the November 16, 2009 Amendment, as well as independent claims 23 and 29 as amended herein, are generic to both Group 1 and Group 2. Method claim 17, although non-elected, was previously amended to depend upon claim 37. The applicant respectfully believes that independent claims 37, 23, and 29 distinguish over the cited art and requests that, should claims 37, 23, and 29 be allowed, that the non-elected dependent claims be allowed as well.

Claim 28 has now been deleted.

Claim 31 was rejected based on 35 U.S.C. § 101 as being drawn to non-statutory subject matter. Such claim was amended in the November 16, 2009 Amendment to be directed to a programmed computer to overcome such rejection.

In the September 24, 2008 Office Action, claim 26, and all of the other elected claims (except for claim 32), were rejected as being anticipated by Bigio et al. U.S. patent No. 6,381,018. The applicant respectfully requests reconsideration.

The following Remarks supplant the Remarks submitted in the November 16, 2009 Amendment, and are directed to the claims as currently amended.

Bigio is directed at a method and device using a first fiber as a fiber for delivering light from the light source in the sample and using different fibers for collecting the scattered light and allowing measurement thereof. (Col. 2, ll. 50-55)

The major difference between the claimed method and device and Bigio is using at least one fiber that both delivers light from the light source and measures scattered light from the sample.

This allows obtaining a different backscatter signal by combining at least the signal measured with the first fiber, which in the description is also indicated as dc-fiber, and a signal from at least one of the second fibers, referred to as c-fiber. (Note that the claims do not preclude using more than one dc-fiber and/or more than one c-fiber.)

Due to the new construction and method steps, this new and completely different differential backscatter signal is obtained having particular and advantageous properties.

The *measured differential backscatter signal* is basically the result of a linear subtraction of the signal measured with the dc fiber and the signal measured with the c-fiber, in the formula:

$$a \cdot I(\lambda) - b \cdot I(\lambda)$$

where a and b are quality correction variables for the obtained signals.

The independent claims are directed to apparatus and methods for obtaining the advantageous backscatter signal according to the invention.

The measuring fibers (dc-fiber and c-fiber) will measure light scattered by the sample. The amount of measured scattered light is generally similar for both fibers.

However, the dc-fiber will also measure scatted light from directly in front of the fiber end positioned on the sample. Since no light is emitted from the c-fiber, such directly scattered light will not be measured by the c-fiber.

The differential signals results in obtaining a signal generally relating only to absorption/scattering properties of the sample directly in front of the dc-fiber.

Because the differential signal relates only to properties of the sample directly in front of the dc-fiber end, the signal is basically independent of the path length of the photon as the differential backscatter signal is a result of scattering only of the volume of sample directly in front of the end of the dc-fiber. This volume is basically a relatively small volume within a distance of the mean free path length.

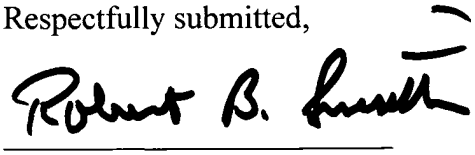
Another way to view this is that the internal radius of the fiber, i.e., the size of the fiber ends in contact with the sample, determines the volume to which the differential backscatter signal according to the invention relates. In this manner, the radius of the fiber determines the free path length of the photons present in the measured differential backscatter signal obtained according to the invention.

As the construction is completely different from the Bigio document, and no other prior art has been cited which discloses or suggests this specific claimed backscatter signal, the applicants respectfully submit that the prior art in no way suggests the method an device as claimed.

Dependent claim 17 is directed to specific curve fitting for samples having a relatively low concentration of suspension particles. Dependent claim 26 is directed to specific curve fitting signals for samples having a relatively high concentration of particles, such as milk.

For the foregoing reasons, the applicant respectfully requests favorable consideration and allowance of the amended application.

Respectfully submitted,



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